

A NEW SPECIES OF *ERIGERON* (ASTERACEAE)
FROM SOUTHWESTERN OREGON

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ABSTRACT

Erigeron stanselliae K.L. Chambers, sp. nov., is a narrowly endemic species of serpentine sites in the Coast Range of southwestern Curry County, Oregon. A member of the taxonomically difficult *E. eatonii* sens. lat. alliance, its known range is disjunct from related taxa in the complex, including *E. robustior*, *E. maniopotamicus*, *E. lassenianus*, and *E. eatonii* var. *plantagineus*.

RESUMEN

Erigeron stanselliae K.L. Chambers, sp. nov., es una especie endémica de las serpentinas en la Cordillera Costera del suroeste de Curry County, Oregón. Un miembro del taxonómicamente difícil del grupo *E. eatonii* sens. lat., su área conocida es disyunta con los taxa relacionados del complejo, incluyendo *E. robustior*, *E. maniopotamicus*, *E. lassenianus*, y *E. eatonii* var. *plantagineus*.

DESCRIPTION

Erigeron stansellii K.L. Chambers, sp. nov. (Figs. 1–2). TYPE: U.S.A. OREGON. Curry Co.: Flycatcher Spring, U.S. Forest Service Road 1703 off Hunter Creek Road, T.37S., R.13W., Sect. 19, elev. 744 m, gravelly serpentine soil on roadside flat, mixed shrub/woodland, with *Pinus jeffreyi*, *P. attenuata*, *P. monticola*, *Quercus vaccinifolia*, *Arctostaphylos nevadensis*, 20 Jun 2009, K.L. Chambers 6447 (HOLOTYPE: OSC 226910; ISOTYPES: BRIT, NY, UC).

Species ad *E. eatonii* gregem affinis a *E. eatonii* var. *plantagineo* involucri minute glandulifero foliis caulibus distaliter paucistrigosis differt, a *E. maniopotamico* involucri minute glandulifero foliis glabris vel paucistrigosis differt, a *E. robusto* altitudine brevioribus capitulis minoribus involucri minute glandulifero differt, a *E. lasseniano* foliis glabris vel paucistrigosis pedunculis 5–10 cm longis distaliter modice glanduliferis et strigosis differt.

Plants perennial, tap-rooted, taproot slender, 1–3 mm diameter, surface striate, caudices short (rarely elongate), 1–3 surmounting taproot, surface striate or corky. **Stems** simple or 1 (rarely 2–3)-branched medially, erect or decumbent, 7–25 cm, glabrous or sparsely strigose, leafy 0.3–0.8 times length, distal peduncle leafless, (3–) 5–10 cm, glabrous or sparsely strigose, minutely glandular beneath the head. **Principal leaves** in a basal rosette, entire, linear to narrowly oblanceolate, mostly 1-nerved, 4–12 cm long, 2–5 mm wide, glabrous or sparsely strigose, cauline leaves 4–8, 0.25–0.33(–0.7) times basal, gradually or promptly reduced distally, linear to narrowly elliptic, 0.5–4 cm long, glabrous or loosely strigose on both surfaces, with unicellular or few-celled, sharply pointed trichomes. **Heads** 1–2(–4) per stem, held well above leaves, involucri 5–6(–7) mm high, 5–10(–11) mm wide (pressed), phyllaries in 2–3 equal or subequal series, linear-lanceolate, acute to acuminate, 1-nerved, margins green (on outer) or narrowly scarious (on inner phyllaries), loosely or densely white-pilose to strigose dorsally, with under layer of minute glandular pili (Fig. 2). **Ray florets** 14–36, corollas 6–10 mm long, 1–1.5 mm wide, white or pinkish, curling abaxially in age. **Disc florets** corollas 3–4 mm, teeth deltate, acute. **Cypselae** 3–4 mm (immature), 2-nerved, sparingly to densely strigose; pappus of 14–24 free, minutely hispid bristles, 2.8–3.0 mm long, with a few short outer setae. Chromosome number: $2n = ca. 18$.

Additional collections examined: **OREGON. Curry Co.:** Flycatcher Spring, near Red Flat, above the North Fork of the Pistol River, T.37S., R.13W., Sect. 19, 15 Jun 1970, W.G. Schroeder s.n. (OSC 132317); McKinley Mine area at Signal Buttes E of Gold Beach, T.37S., R.13W., Sect. 6, serpentine “shingle” with scrub oaks, *Arnica spathulata*, *Senecio canus*, *Microseris laciniata*, 23 Jun 1982, V. Stansell s.n. (OSC 158310); Flycatcher Spring, Pistol River drainage, T.37S., R.13W., Sect. 19, 6 Jun 2009, V. Stansell s.n. (OSC 226909).



HOLOTYPE
 ERIGERON STANSELLIAE K. L. Chambers
 Annotated: K. L. Chambers, 8 July 2011

HERBARIUM
 226910
 OREGON STATE
 UNIVERSITY



Herbarium of Oregon State University
 PLANTS OF THE SISKIYOU MOUNTAINS
 ERIGERON

CURRY CO.: Flycatcher Springs, Rd. 1703 off Hunter Creek Rd. T37S, R13W, Sec. 19. Serpentine gravel on roadside flat, decumbent in open sites, erect when growing in low *Arctostaphylos nevadensis*. With *Pinus jeffreyi*, *P. attenuata*, *P. monticola*, *Quercus vaccinifolia*. 2455 ft. June 20, 2009 K.L. Chambers (6447)

FIG. 1. Habit of *Erigeron stanselliae* (holotype, OSC). Scale = 5.1 cm.



FIG. 2. Capitulum of *Erigeron stanselliae*. Note pubescence of minute glandular trichomes. Scale = 1.25 cm.

Etymology, habitat, and distribution.—named in honor of Veva Stansell, long-time resident botanist of southwestern Oregon, who guided the author to the population from which the type collection was taken. The two known localities for this species, McKinley Mine and Flycatcher Spring, are some 5 km apart, north to south, near the western margin of the Siskiyou National Forest, about 11 km east and 13 km southeast, respectively, from Gold Beach. The habitat is mixed scrubland and woodland, in serpentine gravel or “shingle.” Plants are shorter, with decumbent stems, in open sites, erect and taller when growing up through mats of *Arctostaphylos nevadensis* (Fig. 1). Additional associated species, from field notes, include *Chamaecyparis lawsoniana*, *Juniperus communis*, *Antennaria suffrutescens*, *Garrya buxifolia*, *Ceanothus pumilus*, *Erigeron foliosus*, and *Polygala californica*. Detailed ecological studies of the habitat have not been done, and population sizes of the species are not known. On the Geological Map of Oregon (U. S. Geological Survey, G.W. Walker and N.S. MacLeod 1991), these sites are in a small area, about 20 km long and up to 5 km wide, comprising ultramafic and related rocks of Jurassic ophiolite sequences, locally altered to serpentinite. There are no exposures of similar ultramafics between this occurrence and the coast, the closest being about 10 km to the east. The near-coastal climate and serpentine substrate may be unique to *E. stanselliae*, although it would be unusual if the

species were limited in distribution to such a small area. There is a gap in range between it and the related taxa *E. maniopotamicus* G.L. Nesom & T.W. Nelson, *E. robustior* (Cronquist) G.L. Nesom [*E. decumbens* ssp. *robustior* Cronquist (1947)], and *E. lassenianus* Greene [including *E. flexuosus* Cronquist (1947)] found in Humboldt and Trinity Cos., California (Nesom & Nelson 2004). The intervening area, particularly in Del Norte Co., might be searched for similar serpentine sites perhaps occupied by *E. stanselliae*. The related *E. eatonii* var. *plantagineus* (Greene) Cronquist is a more inland taxon, approaching *E. stanselliae* from the east only as far as Jackson Co., e.g. *Chambers* 4358, Red Mtn., OSC (Strother & Ferlatte 1988, map pg. 79).

DISCUSSION

I had originally annotated two OSC herbarium collections of the new species as *Erigeron eatonii* var. *plantagineus*. However, in conjunction with his study of this species (Strother & Ferlatte 1988), John Strother later annotated these sheets "not *E. eatonii*, perhaps *E. peregrinus* alliance near *E. cervinus*." In my opinion, *E. stanselliae* does not compare well with the latter two species but is better placed in the *E. eatonii* alliance. To quote from Strother and Ferlatte (1988), "Crazy-quilt' aptly describes the confounding geographic pattern of sometimes marked and, more often, subtle morphological variants that are subsumed by the phrase 'Erigeron eatonii and allied taxa.'" *Erigeron maniopotamicus* was added to the complex by Nesom and Nelson (2004), who compared their species with related taxa found in northwestern California and adjacent Oregon (mainly *E. eatonii* var. *plantagineus*, *E. robustior*, and *E. lassenianus*). Key traits used in this comparison were (1) size of heads, (2) presence of caudex branches, (3) phyllaries eglandular or minutely glandular, (4) cauline leaves bracteate or absent near heads, or continuing relatively unreduced to near heads, and (5) phyllary shape and apiculation. The following key, adapted from Nesom and Nelson (2004) and Nesom (2006), best distinguishes *E. stanselliae* from the geographically allied species in this complex:

1. Involucres 6–8.5 mm high, (12–)14–20 mm wide (pressed), phyllaries eglandular _____ ***E. robustior***
1. Involucres 4–7 mm high, 5–12(–14) mm wide (pressed), phyllaries minutely glandular or eglandular.
 2. Phyllaries eglandular (sometimes sparsely glandular), leaves usually densely strigose to villous.
 3. Cauline leaves continuing relatively unreduced to near heads; phyllaries elliptic-ob lanceolate to oblong-ob lanceolate _____ ***E. maniopotamicus***
 3. Cauline leaves absent or bracteate near heads; phyllaries narrowly lanceolate to narrowly ob lanceolate _____ ***E. eatonii* var. *plantagineus***
 2. Phyllaries minutely glandular, leaves densely strigose to villous or glabrous to sparsely strigose.
 4. Leaves densely strigose to villous, inflorescence branches, if present, mostly distal, cauline leaves often numerous, not much reduced distally, peduncles 1.5–5(–6) cm, usually densely glandular and strigose below heads _____ ***E. lassenianus***
 4. Leaves glabrous or sparsely strigose, inflorescences branches, if present, medial, cauline leaves 4–8, gradually or promptly reduced distally, peduncles (3–)5–10 cm, lightly glandular and strigose below heads _____ ***E. stanselliae***

Vegetative traits used in these comparisons are affected by age and growth conditions, as shown by plants at the type locality (Fig. 1). All the taxa seem to vary in the degree to which cauline leaves are reduced distally, and the size of the taproot, as well as number of caudex branches, must depend, in part, on plant age. Degree of branching, number of heads per stem, and length of floral peduncles may also reflect age and robustness of growth. Density of leaf and stem pubescence is a notable difference, which may be less affected by conditions of vegetative growth. *Erigeron stanselliae* is the least pubescent in the above group of related taxa; its leaves are frequently glabrous and at the most are lightly strigose with weak trichomes. The stems are also lightly strigose, never densely and stiffly strigose near the apex as in most other taxa. The minute glandular hairs of the stem apex and involucres, in this taxon and in *E. lassenianus*, are only discernable at 20× magnification or higher (Fig. 2). In herbarium specimens they show best on phyllaries at the sides of the head, which were not compressed in the drying process, while on the flattened sides of the heads one finds the basal stumps of broken-off villous trichomes, and these mimic short, non-glandular hairs. In our chromosome preparations, no meiotic cells were present, but a count of approximately 18 was obtained from mitotic divisions in somatic tissue. The diploid number $2n = 18$ is also reported for *E. eatonii* var. *plantagineus* and *E. lassenianus* (Nesom 2006). Polyploidy and apomixis are therefore not indicated for the new species, which is presumed to reproduce only sexually.

Adaptation to serpentine substrates distinguishes *Erigeron stanselliae* from *E. maniopotamicus* (Nesom & Nelson 2004) and *E. eatonii* var. *plantagineus* (Strother & Ferlatte 1988) but not from *E. robustior* or *E. lassenianus*. Its geographical isolation and probable lack of recent hybridization with related taxa of northwestern California are factors in the morphological distinctness and implied species status of *E. stanselliae* as here described.

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